

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A linear diene elastomer resulting from at least one conjugated diene, ~~characterised in that it~~ wherein said diene elastomer comprises cyclic vinyl units in a mass content of greater than or equal to 15% and ~~in that it has~~ having a number-average molecular weight falling within a range of from ~~[[10,000]]~~ 50,000 to 300,000 g/mol.
2. (Currently Amended): A linear diene elastomer according to Claim 1, ~~characterised in that~~ wherein said number-average molecular weight falls within a range of from 60,000 to 300,000 g/mol.
3. (Currently Amended): A linear diene elastomer according to Claim 2, ~~characterised in that~~ wherein said number-average molecular weight falls within a range of from 100,000 to 300,000 g/mol.
4. (Currently Amended): A linear diene elastomer according to Claim 1, ~~characterised in that~~ wherein said mass content of cyclic vinyl units is greater than or equal to 20%.
5. (Currently Amended): A linear diene elastomer according to Claim 1, ~~characterised in that it~~ which comprises a mass fraction of units resulting from conjugated dienes of greater than 30%.

6. (Currently Amended): A linear diene elastomer according to Claim 5, ~~characterised in that it~~ which consists of a butadiene homopolymer or a copolymer of butadiene and a vinyl aromatic compound.

7. (Currently Amended) A linear diene elastomer according to Claim 1, ~~characterised in that said number-average molecular weight falls within a range of from 10,000 to 30,000 g/mol and in that~~ wherein said mass content of cyclic vinyl units is greater than or equal to 35%.

8. (Currently Amended): A branched diene elastomer resulting from at least one conjugated diene and capable of being obtained by reaction of a linear diene elastomer according to ~~one of the preceding Claims~~ Claim 1 with a branching agent, ~~characterised in that it~~ wherein said branched diene elastomer comprises cyclic vinyl units in a mass content of greater than or equal to 15% and ~~in that it has~~ having a number-average molecular weight falling within a range of from 30,000 to 350,000 g/mol.

9. (Currently Amended): A branched diene elastomer according to Claim 8, ~~characterised in that~~ wherein said number-average molecular weight falls within a range of from 150,000 to 350,000 g/mol.

10. (Currently Amended): A branched diene elastomer according to Claim 8, ~~characterised in that~~ wherein said mass content of cyclic vinyl units is greater than or equal to 20%.

11. (Currently Amended): A branched diene elastomer according to Claim 8, ~~characterised in that it~~ which comprises a mass fraction of units resulting from conjugated dienes of greater than 30%.

12. (Currently Amended): A branched diene elastomer according to Claim 11, ~~characterised in that it~~ which consists of a homopolymer of butadiene or a copolymer of butadiene and a vinyl aromatic compound

13. (Currently Amended): A process for the production of a linear or branched diene elastomer resulting from at least one conjugated diene, said elastomer comprising cyclic vinyl units in a mass content of greater than or equal to 15% and, prior to optional branching, having a number-average molecular weight falling within a range of from 10,000 to 60,000 g/mol, ~~characterised in that said process~~ comprising the anionic polymerization of one or more monomers comprising at least one conjugated diene monomer, by ~~the~~ a discontinuous reaction, in an inert aliphatic or alicyclic hydrocarbon solvent, of said monomer or monomers with a catalytic system comprising an organolithium initiator and a polar agent comprising two or more heteroatoms, the (polar agent:initiator) molar ratio being greater than 8.

14. (Currently Amended): A process for the production of a linear or branched diene elastomer resulting from at least one conjugated diene, said elastomer comprising cyclic vinyl units in a mass content of greater than or equal to 15% and, prior to optional branching, having a number-average molecular weight falling within a range of from 10,000 to 100,000 g/mol,

~~characterised in that~~ said process ~~[[comprises]]~~ comprising the anionic ~~[[polymerisation]]~~ polymerization of one or more monomers comprising at least one conjugated diene monomer, by ~~[[the]]~~ a continuous reaction, in an inert aliphatic or alicyclic hydrocarbon solvent, of said monomer or monomers with a catalytic system comprising an organolithium initiator and a polar agent comprising two or more heteroatoms, said system satisfying the following relationship:

- (i) the (polar agent:initiator) molar ratio is greater than or equal to 3.

15. (Currently Amended): A process for the production of a linear or branched diene elastomer resulting from at least one conjugated diene, said elastomer comprising cyclic vinyl units in a mass content of greater than or equal to 15% and, prior to optional branching, having a number-average molecular weight falling within a range of from 10,000 to 300,000 g/mol, ~~characterised in that~~ said process ~~comprises~~ comprising the anionic ~~[[polymerisation]]~~ polymerization of one or more monomers comprising at least one conjugated diene monomer, by ~~[[the]]~~ a continuous reaction, in an inert aliphatic or alicyclic hydrocarbon solvent, of said monomer or monomers with a catalytic system comprising an organolithium initiator, a polar agent comprising two or more heteroatoms, and an alkali metal salt of an aliphatic or alicyclic alcohol, such that said system simultaneously satisfies the following three conditions:

- (i) the (polar agent:initiator) molar ratio is greater than or equal to 3.
- (ii) the (salt:initiator) molar ratio falls within a range of from 0.01 to 2, and
- (iii) the (salt:polar agent) molar ratio falls within a range of from 0.001 to 0.5.

16. (Currently Amended): A process for the production of a linear or branched diene elastomer according to Claim 14, ~~characterised in that~~ wherein the (polar agent:initiator) molar ratio is greater than or equal to 5.

17. (Currently Amended): A process for the production of a linear or branched diene elastomer according to Claim 16, ~~characterised in that~~ wherein the (polar agent:initiator) molar ratio is greater than or equal to 10.

18. (Currently Amended): A process for the production of a linear or branched diene elastomer according to Claim 17, ~~characterised in that~~ wherein the (polar agent:initiator) molar ratio is greater than or equal to 15.

19. (Currently Amended): A process for the production of a linear or branched diene elastomer according to Claim 15, ~~characterised in that~~ wherein said (salt:polar agent) molar ratio falls within a range of from 0.001 to 0.1.

20. (Currently Amended): A process for the production of a linear or branched diene elastomer according to Claim 15, ~~characterised in that~~ wherein said (salt:initiator) molar ratio falls within a range of from 0.01 to 0.6.

21. (Currently Amended): A process for the production of a linear or branched diene elastomer according to Claim 20, ~~characterised in that~~ wherein said (salt:initiator) molar ratio falls within a range of from 0.01 to 0.2.

22. (Currently Amended): A process for the production of a linear or branched diene elastomer according to Claim 21, ~~characterised in that~~ wherein said (salt:initiator) molar ratio falls within a range of from 0.3 to 0.6.

23. (Currently Amended): A process for the production of a linear or branched diene elastomer according to Claim 13, ~~characterised in that~~ wherein said polar agent belongs to the group consisting of diamines and diethers.

24. (Currently Amended): A process for the production of a linear or branched diene elastomer according to Claim 23, ~~characterised in that~~ wherein said polar agent is tetramethylethylenediamine.

25. (Currently Amended): A process for the production of a linear or branched diene elastomer according to Claim 15, ~~characterised in that~~ wherein said salt is a sodium salt of an aliphatic alcohol having from 3 to 12 carbon atoms, ~~such as sodium tert.-amylate.~~

26. (Currently Amended): A process for the production of a branched diene elastomer according to Claim 13, ~~characterised in that it~~ which further involves reacting the product of said ~~[[polymerisation]]~~ polymerization with a coupling or starring agent in order to obtain said branched diene elastomer.

27. (Currently Amended): A catalytic system usable for producing, by continuous or discontinuous anionic ~~[[polymerisation]]~~ polymerization of one or more conjugated dienes in an inert aliphatic or alicyclic hydrocarbon solvent, a linear diene elastomer comprising cyclic vinyl units in a mass content of greater than or equal to 15% and having a number-average molecular weight falling within the range of from 10,000 to 60,000 g/mol, said system comprising an

organolithium initiator and a polar agent comprising two or more heteroatoms, ~~characterised in that~~ wherein the (polar agent:initiator) molar ratio is greater than ~~[[8]]~~ or equal to 10.

28. (Canceled)

29. (Currently Amended): A catalytic system according to Claim 28, ~~characterised in that~~ wherein said (polar agent:initiator) molar ratio is greater than or equal to 15.

30. (Currently Amended): A catalytic system usable for producing, by continuous anionic ~~[[polymerisation]]~~ polymerization of one or more conjugated dienes in an inert aliphatic or alicyclic hydrocarbon solvent, a linear diene elastomer according to Claim 1, ~~characterised in that~~ wherein said system comprises an organolithium initiator, a polar agent comprising two or more heteroatoms and an alkali metal salt of an aliphatic or alicyclic alcohol, said system simultaneously satisfying the following three conditions:

~~[[i')]]~~ (iv) the (polar agent:initiator) molar ratio is greater than ~~[[8]]~~ or equal to 10,

(v) the (salt:initiator) molar ratio falls within a range of from 0.01 to 2, and

(vi) the (salt:polar agent) molar ratio falls within a range of from 0.001 to 0.5.

31. (Currently Amended): A catalytic system according to Claim 30, ~~characterised in that~~ wherein said (salt:initiator) molar ratio falls within a range of from 0.01 to 0.2 or from 0.3 to 2, and in that said (salt:polar agent) molar ratio falls within a range of from 0.001 to 0.1.

32. (Currently Amended): A catalytic system according to Claim 31, ~~characterised in that~~ wherein said (salt:initiator) molar ratio falls within a range of from 0.01 to 0.2.

33. (Currently Amended): A catalytic system according to Claim 31, ~~characterised in that~~ wherein said (salt:initiator) molar ratio falls within a range of from 0.3 to 0.6.

34. (Currently Amended): A catalytic system according to Claim 27, ~~characterised in that~~ wherein said polar agent belongs to the group consisting of diamines and diethers.

35. (Currently Amended): A catalytic system according Claim 34, ~~characterised in that~~ wherein said polar agent is tetramethylethylenediamine.

36. (Currently Amended): A catalytic system according to Claim 30, ~~characterised in that~~ wherein said salt is a sodium salt of an aliphatic alcohol having from 3 to 12 carbon atoms, ~~such as sodium tert. amylate.~~

37. (New): A process for the production of a linear or branched diene elastomer according to Claim 25, wherein said salt is sodium tert. amylate.

38. (New): A catalytic system according to Claim 36, wherein said salt is sodium tert. amylate.

39. (New): A catalytic system according to Claim 30, wherein the polar agent:initiator molar ratio is equal to or greater than 14.1.